NOTES.

In consequence of the unavoidable absence abroad of the new President of the Institution of Electrical Engineers, Mr. W. H. Preece, F.R.S., on the 12th inst., he will deliver his inaugural address on the 26th inst.

A public meeting, arranged by the Technical Instruction Committee of the Essex County Council, will be held in the Shire Hall, Chelmsford, on Friday afternoon, January 13, at 4.30 p.m., Lord Rayleigh in the chair. An address will be given by Sir Henry E. Roscoe on technical instruction in agricultural counties, with especial reference to science teaching. Afterwards a discussion will take place.

Dr. Percy Rendall, F.Z.S., has accepted an appointment as Resident Medical Officer to the Sheba Gold-mining Company in the Barberton District of the Transvaal. He will reside at Eureka City, at an elevation of 5000 feet above the sea-level. Dr. Rendall made a good collection of birds during his recent residence at Bathurst on the Gambia, of which he has given an account in the *Ibis* for last year (*Ibis*, 1892, p. 215). He has also made many valuable donations to the Zoological Society's Menagerie, amongst which is the unique example of the Nagor Antelope (*Cervicapra redunca*), presented by him in June, 1890. Of this scarce animal there is, we believe, no example in the British Museum. Dr. Rendall's new appointment will give him many opportunities of extending our zoological knowledge of a little known district.

Lord Walsingham, who has devoted much of his attention to the micro-lepidoptera, has filled the vacancy on the staff of the *Entomologists' Monthly Magazine* occasioned by the death of Mr. Stainton.

Last week a preliminary meeting was held at the house of Sir James Paget to consider what steps should be taken with regard to a memorial of Sir Richard Owen. It was decided that a committee should be formed to make the necessary preparations. The following, among others, have consented to serve as members:—The Presidents of the Royal Colleges of Physicians and Surgeons and of most of the scientific societies, the Duke of Teck, Lord Playfair, Prof. Huxley, Sir Joseph Hooker, Sir Henry Acland, Sir John Evans, Dr. Michael Foster, Mr. Sclater, Sir W. Savory, Mr. Hulke, Sir Joseph Fayrer, Sir Edward Fry, Dr. Günther, Mr. Carruthers and Dr. H. Woodward. Sir William Flower will act as treasurer, and a general meeting will shortly be called. It has been suggested that the memorial should be a marble statue, to be placed in the hall of the Natural History Museum.

Prof. Westwood, who died on Monday at the age of eighty-seven, will be greatly missed at Oxford. To most people he is known chiefly as a writer on the archæology and palæography of art, but he was equally eminent as an entomologist. He was one of the founders of the Entomological Society, and received one of the Royal Society's gold medals for his entomological researches.

We regret to record the death of General Axel Wilhelmovitch Gadolin, an old member of the Russian Academy of Sciences. He was born of Finnish parents on July 10, 1828, received his education in the Finnish Corps of Cadets, and till his death remained in the Russian Artillery, devoting his leisure time to mineralogical, and especially to mathematical, researches into the molecular forces which act in the formation of crystals. One of his earlier works, published in the *Verhandlungen der Mineralogischen Gesellschaft zu St. Petersburg*, was on some minerals from Pitkäranta. His chief work, published in 1867, was his "Deduction of all the Systems of Crystals and their Derivates from a Unique Principle." A deep impression was produced upon the members of the Russian Mineralogical Society by Gadolin's first communication upon this subject. The lucidity with which he deduced all systems of crystallization from fundamental principles of equilibrium of molecular forces, and the simplicity of the exposition of his researches, entirely based upon high mathematical analysis, reminded his hearers of some of the best pages of Laplace's writings. The work soon became widely known in a German translation. A paper on the resistance of the walls of a gun to the pressure of gunpowder gases also deserves mention, as, in addition to the formerly known formulæ of highest resistance of cylinders, he gave a new formula of minimal resistance. Later on his method was used with great success by Klebsch, in his well-known "Theorie der Elasticität fester Körper," for deducing some general equations of equilibrium of solid bodies.

The last issue of the *Izvestia* of the East Siberian Geographical Society (vol. xxiii. 3) contains an obituary notice by V. Obrutcheff, of I. D. Chersky, who died in the far north-east of Siberia, during his expedition to the Kolyma river, after having given many years of his life to the active geological exploration of Siberia. He began his work in 1872 at Omsk, where he made most valuable discoveries of post-tertiary mammals. During the next two years he explored the Tunka and Kitoi Alps, but his rich materials were lost during the great conflagration at Irkutsk in 1879. In 1875 and 1876 he explored the Nijneudinsk caves, making again remarkable finds of quaternary mammals; and then he gave fully five years to the study of the stores of Lake Baikal, embodying the results of his extensive researches in a map (6·7 miles to the inch), and in vol. xii. of the *Memoirs* of the East Siberian Society, and vol. xv. of the *Memoirs* of the Russian Geographical Society. In 1882 and 1883 he explored the Lower Tunguska, and again made rich finds of fossil mammals. The next five years he spent at the Academy of St. Petersburg, preparing the part of Ritter's "Asia" which is devoted to Lake Baikal, and working out the rich materials collected by another lamented Polish explorer of East Siberia, Czekanowski. He also worked out the collections brought in from the New Siberia Islands by MM. Bunge and Toll, and came to such interesting and new conclusions as to the recent geological history of Arctic Siberia, that the Academy of Sciences sent him out in 1891, at the head of a new expedition to the Kolyma region. There he died, in the midst of his promising work.

The twentieth annual dinner of the old students of the Royal School of Mines will be held at the Holborn Restaurant, on Tuesday, January 10, at 7 o'clock. The chair will be taken by Mr. W. Gowland, late of the Imperial Mint, Osaka, Japan.

Mr. G. T. Atkinson has been appointed Professor of Cryptogamic Botany at Cornell University, Ithaca, State of New York, in the place of Prof. W. R. Dudley, who has gone to the Leland-Stanford University, Paolo Alto, California.

At the next public meeting of the French Academy, in December 1893, forty-five prizes will be awarded for the best work tending to the advancement of the various branches of science. Of these, the following are, by the terms of the bequests, open to competitors of all nationalities. The Prix Lalande will be awarded for the most intereresting observation, or the memoir or work most useful for the progress of Astronomy. Its value is 540 francs. The Prix Valz, of 460 francs, is offered under the same conditions. Three prizes of 10,000 francs each, bequeathed by M. L. La Caze, will be awarded annually for the best contributions to Physiology, Physics, and Chemistry respectively. The Prix Tchihatchef, of 3000 francs, is offered annually to naturalists who have distinguished themselves most in the exploration of the continent of Asia or the adjacent isles excluding better known regions such as British India, Siberia proper, Asia Minor, and Syria. The explorations must have some object connected with Natural Science, physical or mathematical, and will not be awarded for archæological or ethnographic work. All these prizes will be awarded in December 1893. Works for competition to be sent in to the *Sécrétariat* before June 1. The Prix Leconte, of 50,000 francs, for the most important scientific discovery, will be awarded in 1895.

The Royal Academy of Sciences of Turin, in accordance with the will of Dr. Cesare Alessandro Bressa, and in conformity with the programme published December 7, 1876, announces that the term for competition for scientific works and discoveries in the years 1889–92, to which only Italian authors and inventors were entitled, was closed on December 31, 1892. The ninth Bressa prize will be given to the scientific author or inventor, whatever be his nationality, who during the years 1891–94, "according to the judgment of the Royal Academy of Sciences of Turin, shall have made the most important and useful discovery, or published the most valuable work on physical and experimental science, natural history, mathematics, chemistry, physiology and pathology, as well as geology, history, geography and statistics." The term will be closed at the end of December 1894. The sum fixed for the prize, income tax being deducted, is 10,416 francs. Any one who proposes to compete must declare his intention within the time above mentioned, by means of a letter addressed to the President of the Academy, and send the work he wishes to be considered. The work must be printed. Works which do not obtain the prize will be returned to the authors, when asked for within six months from the adjudication of the prize. None of the national members, resident or not resident, of the Turin Academy can obtain the prize. The Academy gives the prize to the scientific man considered most worthy of it, even if he has not competed.

Messrs. Macmillan and Co. hope to publish early in the spring the second volume of Dr. Arthur Gamgee's Treatise on Physiological Chemistry. This volume, which deals with the Digestive Processes, will be followed at no long interval by an enlarged and revised edition of the first volume, which originally appeared in 1880.

The United States Government is inviting the various European Governments to send delegates to an International Conference of Meteorologists, to be held at Washington. The following is said to be proposed as a provisional programme of topics to be discussed by the Conference: (*a*) The organization of additional meteorological work for the benefit of agriculture. (*b*) The extension to all ports frequented by commerce of the benefits of systematic storm and weather signals, and the introduction of a uniform system of storm warnings throughout the world. (*c*) The co-operation of all nations in the publication of a daily chart of the weather over all the habited lands and frequented oceans for the study of the atmosphere as a whole, and as preparatory to the eventual possibility of predicting important changes several days in advance. (*d*) The equable apportionment of stations, publications, and expenses among the nations, and the suggestion of practical methods by which to secure observations from those countries that are not represented in this Conference. (*e*) The encouragement by the respective Governments of special scientific investigations looking to the advancement of meteorology. Such other matters as the delegates may think advisable to submit for discussion, or for future report, will also be considered.

During the past week the sharp frost has continued almost uninterruptedly over these islands, with the exception of a partial thaw on Friday and Saturday, caused by a disturbance in the west spreading to the eastward. The greatest increase of temperature occurred in the north and west, but in the south-east of England the day readings were only slightly above the freezing-point. There was a complete change in the type of weather at the close of the week; a large anticyclone had formed over Scandinavia, and the air over nearly the whole of Europe was intensely cold, the minimum in the shade at Haparanda on Sunday registering 72° below the freezing-point, and the barometer on subsequent days rose to 31 inches and upwards in these islands. These conditions were accompanied by cold easterly gales in the south-west of England, while a heavy fall of snow was experienced in the south-eastern districts. On the coast of Kent the shade minimum fell to 11° during Monday night. The *Weekly Weather Report* issued on December 31 shows that the temperature of that period was much below the mean, amounting to 9° or 10° over the greater part of England, and to 12° in the Midland counties. Very little rain fell during the week; the deficiency of rainfall in the south-western district of England for the last year amounts to 10·8 inches, or more than 25 per cent. below the average of the 25 years 1866–90. A good deal of fog was experienced at the inland stations during the week.

Some very interesting entomological notes from the Eastern Archipelago are given by Mr. J. J. Walker in the January number of the *Entomologists' Monthly Magazine.* Incidentally Mr. Walker mentions that Dr. Wallace's residence in these islands, after a lapse of more than thirty years, is not forgotten, and that the Dutch translation of the "Malay Archipelago" is "as highly appreciated in the lands of which he gives so vivid a picture as the original work is at home."

At the Physikalisch-Technische Reichsanstalt, Berlin, copies of standard mercury resistances are being constructed in which the mercury does not require renewal (*Wiedemann's Annalen*). They consist of U-shaped tubes filled with mercury in a vacuum and then sealed by fusion. Into each of the ends are fused three thin platinum wires connecting with the main current, the secondary circuit, and the galvanometer respectively. Since the connections are rigidly joined to the glass, it is possible to employ platinum wires as thin as 0·3 mm. so that there is no danger of heat being conducted into the mercury from without. The copy, mounted in a perforated brass box with an ebonite lid, is immersed in petroleum contained in another brass box, so that the binding screws are covered. This box is again surrounded during the experiment with a mixture of fine ice and water. The resistance is thus taken at a temperature which can easily be obtained, and which is uniform throughout the containing vessel.

An apparatus for demonstrating the difference of potential at the poles of a galvanic cell has been constructed by Messrs. Elster and Geitel, of Wolfenbüttel (*Zeitschr. für Phys. und Chem. Unterricht*). It is a modification of Thomson's water-dropping influence machine. Two insulated metallic vessels can be filled with water by pressing a rubber ball communicating with a three-necked jar. The jets enter the vessels through two metal rings. One of these rings is connected with the positive pole of the cell. The jet on passing through becomes negatively charged, and the charge is communicated to the vessel and through a wire to the second ring, which acts by induction on the other jet. A strong positive charge is soon accumulated on the outside of the second vessel, and can be exhibited by a gold leaf or aluminium foil electroscope.

In 1869 it was decided, in France, to give a medal and pension of 250 francs to every old soldier of the Republic and the Empire who could show two years of service, or two campaigns, or a wound. An interesting statistical record of these "médaillés de Sainte Hélène" as of "a generation which is disappearing," is given by M. Turquan in the *Revue Scientifique*. The first list, in 1870, comprised 43,592 names; and these men must have almost exclusively served under the Empire. They are now reduced to 27. The oldest, Vivien by name, a Lyons man, is now 106. When 13 he was with Bonaparte in Egypt, fought in 22 campaigns, and was one of the Imperial Guard at Waterloo. The youngest is 92, and served in the navy. The mean age of the 27 survivors is 97 or 98 years. The annual number of deaths in this body of men reached a maximum of 6456 in 1872, since which year it has been gradually diminishing. The proportional mortality rose, in general, till 1889, but in the years since there has been a marked fall, testifying to the exceptional vitality of those late survivors. M. Turquan calculates that this remnant will have wholly disappeared by the end of the century. Going back to 1815, he estimates the generation to which the men belong at about 300,000, with a mean age of 25 years, and that 500,000 births between 1785 and 1795 would concur to its formation. From figures relating to the Napoleonic wars he comes to the grim conclusion that one man in five of those born between the years just named was destined to die in war. It is, he says, to the immense losses of men during the ten years of war of the Empire that the present generations owe their low birth-rate.

Mr. J. R. S. Clifford offers some interesting observations in the January number of *Nature Notes*—the Selborne Society's magazine—on the Death's-head moth and bees. Last July a friend of his at Gravesend found one of these huge moths trying to gain access to a hive, having evidently been drawn to the spot by the odour of the honey. This disposes of doubts which have been suggested as to the old statements about this moth's habit of entering hives when it has a chance. The construction of modern hives keeps it out, but "where old-style hives are used, the moth can and does enter, and occasionally one has been found dead within a hive, the bees, being unable to remove so bulky an insect, having taken the precaution to embalm its body with what is called *propolis*." According to Mr. Clifford, some Continental bee-keepers have discovered that "the bees are aware they are liable to the intrusions of this big moth," and when the bees are "located in the old-fashioned hive, the insects erect a kind of fortification at the portal. This is constructed with a narrow passage and a bend, past which the Death's-head could not possibly make its way, and which it has no jaws to bite through."

We learn from the *Agricultural Journal*, issued by the Department of Agriculture at Cape Colony, that much attention is being given there to questions connected with the fruit export trade. The department is in correspondence with the steamship companies with a view to securing every possible encouragement to the trade, which is expected to be taken up on a considerable scale this year. Replying to inquiries on the subject, the Castle Mail Packets Company announce that they will give every publicity to the rates of freight to be charged and the stowage arrangements, &c. The Company will also concede a somewhat lower rate for the less remunerative fruits carried in the cool chambers, and will reserve a cool and well-ventilated part of the vessel for conveyance of fruit as ordinary cargo. Careful instructions have been issued to captains of the Company's vessels in regard to the stowage and carriage of fruit.

Dr. Theodore Maxwell has issued a useful catalogue of Russian medical dissertations and other works he has collected and presented to the Royal College of Surgeons of England. In order that the dissertations may be of service to students who do not read Russian, he has indicated the nature of each work in English, and has given references to such abstracts in the *Lancet* or elsewhere as he has himself made or happens to be acquainted with.

An excellent "Child Life Almanack" for 1893, by A. M. Clive Bayley, has been published by Messrs. G. Philip and Son. It is issued as an extra number of "Child Life," and the object, as the author explains, is to provide teachers with suggestions both for lessons to be prepared and observations to be made. Teachers who may wish to give "seasonable" lessons will find many most useful hints as to what really goes on in nature during the various periods of the year.

Mr. John Browning, optical and physical instrument maker, has issued an illustrated catalogue of magic, dissolving view, and optical lanterns, lime-light apparatus, and slides.

The extraordinary diversity in the temperature at which different micro-organisms flourish and multiply, has from time to time been the subject of some interesting investigations by Fischer, Globig, and others. Thus Fischer isolated fourteen different species of bacteria from the sea-water in Kiel harbour, and from soil in the town itself. These he was actually able to cultivate successfully at the freezing temperature (0° C.) as well as at from 15° to 20° C. Globig, on the other hand, studied the behaviour of micro-organisms at high temperatures and separated out no less than thirty varieties from garden soil which would grow at 60° C. Some of these were even able to develop at 70° C., whilst the majority refused to grow at all below 50° C., some still more fastidious individuals objected to any temperature below 60° C., and others again required a temperature of between 54° and 68° C. One bacillus, however, was discovered more catholic in its taste in this respect, for whilst growing at 68° C. it managed to develop also at from 15° to 20° C. Some fresh contributions on the growth of micro-organisms at low temperatures have recently been made by Forster of Amsterdam ("*Ueber die Entwickelung von Bakterien bei niederen Temperaturen*"). As far back as 1887 Forster described a phosphorescent bacillus obtained from sea-water which was found not only capable of growing, but of producing the phenomenon of phosphorescence at 0° C. In further researches made by this investigator in conjunction with Bleekrode, it is stated that, although not many different species were found by them to develop at 0° C., yet immense numbers of individual bacteria belonging to this category were detected in very various media. Thus one cubic centimetre of milk as sent into the market contained 1000 such micro-organisms, whilst in a single gram of garden soil as many as 140,000 were found. Large numbers of such bacteria were also present in sea-water obtained from the North Sea, and they were also found on the surface of fresh water fish as well as in their alimentary tract. It is well known that to successfully preserve meat and other articles of food it is necessary to employ a much lower temperature than 0° C., and experience has further shown that this is best done when the atmosphere is deprived of all moisture, as is accomplished by the compression and subsequent expansion of the air in enclosed spaces. Haddocks imported from Norway and thus artificially frozen were examined by Forster for bacteria. These fish were first killed and then exposed to a temperature of from 20° to 40° below 0° C. until they became perfectly hard and stiffly frozen, when they were removed to a cold chamber in which the temperature varied from 8° to 15° below 0° C. In spite of the extremely low temperature to which these fish had been subjected, on examining them when still hard frozen, a considerable number of bacteria were found in the abdominal cavity which had been opened when the fish was killed. It is obvious that during the interval which elapsed between the killing of the fish and their transference to the freezing chamber, bacteria must have been able to gain access, but had not had time to multiply to any considerable extent before the fish was frozen. Forster points out, what is sufficiently apparent, that the packing of samples of water in ice when sent from a distance for bacteriological examination to prevent the multiplication of the micro-organisms present, is really of very little if any use at all. Thus it was already shown several years ago by Percy Frankland that the bacteria in filtered Thames water were able to multiply extensively, even when preserved for some days in a refrigerator.

THE additions to the Zoological Society's Gardens during the past week include a Bittern (*Botaurus stellaris*), European, presented by Lord Ilchester, F.Z.S.; two Hamsters (*Cricetus frumentarius*), British, presented by Miss Pugh; two Alligators (*Alligators mississippiensis*), from Florida, presented by Master Williams; a Common Snipe (*Gallinago cœlestis*), British, purchased.

OUR ASTRONOMICAL COLUMN.

COMET HOLMES (NOVEMBER 6, 1892).—The following is a continuation of Herr Berberich's ephemeris of this comet, the places being for Berlin, midnight:—

		R A.	Decl.	Log r.	Log Δ.
		h. m. s.	° ′		
Jan.	5	1 8 50	+33 47·9	0·4119	0·3400
	6	9 59	46·4		
	7	11 8	45·0		
	8	12 18	43·7		
	9	13 30	42·6	0·4143	0·3516

The comet is now near to and south following β Andromedæ. Reports from various Observatories state that the comet is now very dim.

COMET BROOKS (NOVEMBER 20, 1892).—This comet is now travelling very quickly. The ephemeris for Berlin, midnight, is continued below:—

		R.A.	Decl.	Log r.	Log Δ.	Br.
		h. m. s.	° ′			
Jan.	5	18 29 40	+66 5·4	0·0805	9·8562	7·82
	6	19 0 49	13·6			
	7	19 31 22	65 59·2			
	8	20 0 22	24·6	0·0806	9·8651	7·49
	9	20 27 8	64 32·4			
	10	20 51 19	+63 26·0	0·0811	9·8781	7·01

The unit of brightness is taken as that at midnight on November 21.

The track of the comet lies near the pole of the ecliptic, in the constellation Draco.

THE SPECTRUM OF COMET HOLMES.—The spectrum of the comet appears to have been continuous without any trace of bright bands. At South Kensington it appeared to have its brightest part near the chief carbon fluting (λ 517), but there was nothing which could be described as a line or fluting. As might be expected, there was a brighter continuous spectrum from the nucleus. The same result was obtained by Mr. Campbell at the Lick Observatory, and by Prof. Keeler at the Allegheny Observatory. The latter observer remarks that the spectrum is just what we should expect if the comet shines entirely by reflected sunlight.

THE RECENT OPPOSITION OF MARS.—In the December number of *Astronomy and Astro-Physics*, Prof. W. H. Pickering summarizes the conclusions derived from the observations of Mars at Arequipa as follows: (1) That the polar caps are clearly distinct in appearance from the cloud formations, and are not to be confounded with them. (2) That clouds undoubtedly exist upon the planet, differing, however, in some respects from those upon the earth, chiefly as regards their density and whiteness. (3) There are two permanently dark regions upon the planet, which under favourable circumstances appear blue, and are presumably due to water. (4) Certain other portions of the surface of the planet are undoubtedly subject to gradual changes of colour, not to be explained by clouds. (5) Excepting the two very dark regions referred to above, all of the shaded regions upon the planet have at times a greenish tint. At other times they appear absolutely colourless. Clearly marked green regions are sometimes seen near the poles. (6) Numerous so-called canals exist upon the planet, substantially as drawn by Prof. Schiaparelli. Some of them are only a few miles in breadth. No striking instances of duplication have been seen at this opposition. (7) Through the shaded regions run certain curved branching dark lines. They are too wide for rivers, but may indicate their courses. (8) Scattered over the surface of the planet, chiefly on the side opposite to the two seas, we have found a large number of minute black points. They occur almost without exception at the junctions of the canals with one another and with the shaded portions of the planet. They range from thirty to one hundred miles in diameter, and in some cases are smaller than the canals in which they are situated. Over forty of them have been discovered, and for convenience we have termed them lakes.

The heights of some of the clouds were found to be not less than twenty miles, and indirect observations have led to the conclusion that the density of the atmosphere of the planet is less than that at the surface of the earth, but probably not as much as ten times less.

Prof. Pickering is of opinion that the opposition of 1894 will be quite as valuable to observers as that of 1892, the distance being but little greater, while the planet will be much farther north, and there is less likelihood of the surface being so much obscured by clouds as during the recent opposition.

GEOGRAPHICAL NOTES

AN interesting illustration of the rapid development of South Africa is given by the recent appointment of a magistrate to reside near Lake Ngami to protect the interests of white traders, and enforce the laws restricting the sale of liquor and ammunition to the natives.

THE January number of the *Geographical Journal*, the new form of the Proceedings of the Royal Geographical Society, contains a paper and map of some importance by Mr. A. P. Harper, descriptive of the central part of the Southern Alps of New Zealand. Government surveyors have been sent for several seasons to map out the glaciers, and an effort is being made by thoroughly exploring and mapping the region to make it the Switzerland of the southern hemisphere in the estimation of tourists, as it is already by virtue of its fine mountain systems.

AN important paper on the physical conditions of the waters of the English Channel is published by Mr. H. N. Dickson in the new number of the *Scottish Geographical Magazine*. He shows how the ebb and flow of the tides in the Channel is affected by the characteristic form of the main feature of the coast-line, viz. bays with the western side running nearly from south to north, turning at a sharp angle, and lying open to the east. The circulation of the water and its temperature were found to be largely determined by these conditions.

MR. COLES gave a successful lecture to young people in the hall of the University of London, on Friday last, covering the first half of his subject, "All the World Over," in a very interesting way. Anecdotes of personal adventure combined with exceptionally fine limelight views of scenery to give a vivid impression of the regions touched upon. The second and last juvenile lecture, under the authority of the Royal Geographical Society, will be given on Friday, January 6, at 4 p.m.

THE Royal Scottish Geographical Society announces a course of educational lectures in continuation of those delivered by Prof. J. Geikie and Dr. H. R. Mill last year. The new course will be on the Geographical Distribution of Animals, by Mr. J. Arthur Thomson, who is at present delivering the Thomson Lectures at Aberdeen. The Society has also provided two special lectures to young people, by Prof. C. G. Knott, on Life in Japan, and by Mr. Graham Kerr on his recent travels in South America.

WE understand that a book of travel in Madagascar and Africa, by Mrs. Colvile, F.R.G.S., describing the observations of the authoress on a recent extensive tour, will shortly be published by Messrs. Blackwood.

MR. J. W. GREGORY, assistant in the Geological Department of the British Museum, has joined as naturalist the sporting expedition of Lieutenant Villiers and others, which is on the point of starting up the Juba. From Bardera, the head of navigation, the party will traverse unknown regions to Lake Rudolf, and from there attempt to cross in a north-easterly direction, through the Galla country and Somaliland to Berbera, on the Gulf of Aden.